REMARKS

Reconsideration of the objections and rejections stated in the Office action mailed September 13, 2005 is requested in view of the above amendments and following actions and comments.

In response to Paragraph 2 of the Office action three new sheets of drawings are enclosed; these sheets are labeled "Replacement Sheets" and present Figures 1-3 with a legend over the figures reading "Copied from U. S. Patent No. 6,607,624".

The cancellation of claims 9 and 10 is believed to obviate the objections stated in Paragraphs 3 and 4 of the Office action.

Independent claims 1 and 17 have been replaced with new claims 40 and 41 to clarify the claim protection sought for applicants' invention. Support for the added language of these claims is found in applicants' specification, among other places, on page 2, lines 27-30.

Applicants' response to the rejections under 35 USC 103 in Paragraphs 5-9 of the Office action is as follows:

Rejection of claims 1-2, 6, 8-14, 16-17 and 19-20 in Paragraph 6

The stated claims are rejected under 35 U.S.C. 103(a) as unpatentable over US Patent Application Publication 2002/0102897 to Berrigan et al. (hereafter Berrigan) in view of any one of three patents: Morman et al., U. S. Patent No. 4,692,371; Stopper et al., U. S. Patent No. 5,635,290; and Shawver et al., U. S. Patent No. 5,652,051. Berrigan (now issued as U. S. Patent No. 6,607,624) teaches fiber-making apparatus like that used in the present patent application and also teaches fibers made on such apparatus from elastomeric polymers that can be used in the present invention.

Applicants' present invention goes beyond the teachings of Berrigan by teaching a coherent web that, for the first time insofar as known, combines two fundamental features or characteristics:

1. The web comprises elastomeric fibers that are oriented, as confirmed by the fact that the fibers have a birefringence number of at least 1×10^{-5}, and preferably at least 1×10^{-2}.

2. The web is dimensionally stable, meaning as stated in applicants' specification, the web exhibits a shrinkage in width of no more than 10% when heated to 70 ° C.

Providing elastomeric fibers that are oriented in a finished web has been a challenge in the art. Applicants are not aware of any prior art that teaches a dimensionally stable coherent web comprised of oriented elastomeric fibers.

Applicants have developed special procedures by which elastomeric fibers can be successfully provided with an orientation that is "locked-in" so as to be retained in a finished web, and wherein the web can further be annealed to make the web dimensionally stable while the orientation of the fibers is retained. The new procedures are summarized in applicants' specification, page 3, line 15 through page 4, line 10, and original claim 21, now withdrawn. Using the language of withdrawn claim 21, the procedure includes the steps of:

> c) maintaining the filaments at their orienting temperature while the filaments are under attenuating and drawing stress for a sufficient time for molecules within the filaments to become oriented along the length of the filaments; d) cooling the filaments to their orientation-locking temperature while the filaments are under attenuating and drawing stress and further cooling the filaments to solidified elastic fibers; … .

These procedures are discussed in further detail at various points throughout the specification, including page 7, line 25 through page 9, line 10; page 21, line 10 through page 23, line 12; and in the specific examples. Berrigan does not make those teachings, and as an illustration, the distances that filaments travel during their preparation in Berrigan's examples are different from the distances used in applicants' examples. For example, in Berrigan's Example 35, the only example directed to polyurethane, the total distance of travel (the distance of die to attenuator plus attenuator to collector, disregarding the length of the attenuator) was about 91 centimeters. By contrast, in applicants' Examples 1 and 2, directed to polyurethane, that distance is over 160 centimeters.

The distance for travel of filaments being processed in applicants' examples are chosen, in accordance with the principles of the above-quoted steps in applicants' new procedure, to achieve locked-in orientation for the elastomeric fibers produced. The particular distance varies with the particular polymer, and with other conditions, but is selected in accordance with applicants' teachings, which go beyond the teachings of Berrigan.

Similarly, Berrigan does not teach applicants' annealing procedure for oriented elastomeric fibers or the dimensional stability obtained thereby. Berrigan does not describe a web of oriented elastomeric fibers that are both dimensionally stable and oriented.

The achievement of dimensionally stable oriented elastomeric webs is a major advance. Oriented elastomeric webs are stronger and they have higher modulus properties. Insofar as known, nothing in the prior art teaches such webs.

The secondary references combined with Berrigan do not overcome the deficiencies of Berrigan. None of them teach dimensionally stable oriented elastomeric webs, nor do they teach the procedure by which applicants achieve such webs. Morman is directed to meltblown webs. It is well known that meltblown fibers do not have retained orientation, and Morman says nothing to suggest that they do. Nor does Morman make any teaching about annealed and dimensionally stable webs.

Stopper is directed to multi-layer fabrics in which one of the layers is an elastomeric layer apparently made by meltblowing. Stopper has all the deficiencies of Morman and seems to be even more remote from the invention than Morman.

Shawver also teaches multilayer products. At column 6, lines 39-49, Shawver states that one of the layers can be an elastomeric meltblown layer. So far as can be seen this reference to an elastomeric meltblown layer is Shawver's only point of connection to applicants' invention and the present patent application. As a reference against applicants' invention, Shawver's reference to a meltblown elastomeric layer has the same deficiencies noted above in connection with Morman.

Rejection of claim 15 in Paragraph 7

Claim 15 is rejected under 35 U.S.C. 103(a) as unpatentable over Berrigan in view of Morman, Stopper, or Shawver, and in further view of Levy et al., U.S. Patent No. 5,714,107. Levy is cited because of its reference to hydroentangling a web. Whatever its teaching on hydroentangling it is clear that Levy does not speak to or overcome the deficiencies noted above of the main references.

Rejection of claims 1-2, 6, 8-14, 16-17 and 19-20 in Paragraph 8

The stated claims are rejected under 35 U.S.C. 103(a) as unpatentable over Berrigan in view of Morman, Stopper, or Shawver, and in further view of Yamamoto et al., U.S. Patent no. 3,783,649. Yamamoto is directed to apparatus for heat-treating fibrous material in a pressurized fluid such as heated steam pressurized above atmospheric pressure (Yamamoto, col. 1, ll. 5-17). The heat treatment is performed while the fibers are being held under tension by rollers (see Yamamoto, column 5, lines 22-31). Also, the heat treatment is performed while the fibers are in a pressurized chamber. The chamber has inlet and outlet nozzles through which the fibers enter and leave the chamber. The nozzles

> pinch the fibrous materials; a sufficient clearance is given for passage of the fibrous material between said nozzles; the fibrous materials are passed through the clearance thus formed, and at the same time, a sealing fluid is ejected from said nozzles .... That is, heat-treatment can be continuously carried out under pressure with a satisfactory sealing effect.

(Yamamoto, col. 2, ll. 44-64).

Yamamoto's process fundamentally differs from Berrigan's process, in which filaments being treated are passed through an attenuating chamber in an air stream; see Berrigan, paragraphs 0020 through 0026 and claim 14. Nothing in Yamamoto suggests how Berrigan's fibers attenuated in an air stream could be passed through Yamamoto's pressurized steam chamber. Yamamoto's teachings are remote from Berrigan and cannot suggest a modification of Berrigan's method and product.

Yamamoto has general comments about the effect of annealing (column 1, lines 19-33), but there is no description in Yamamoto of the materials being treated; nor is there any description of the effect Yamamoto's treatment might have on fibers of a particular material.

Rejection of claim 15 in Paragraph 9

The rejection of this paragraph is like that in Paragraph 7 but adds Yamamoto. The comments stated above for the Paragraph 7 rejection also apply to the Paragraph 9 rejection.

<u>In summary</u>, applicants have created a new product that is not taught or contemplated by the references, and applicants have created a new process for making this new product. None of the references contemplates or teaches a dimensionally stable web of oriented elastomeric fibers,

and none of the references teaches a method for preparing such a web (as summarized in applicants' now-withdrawn claims 21-40). The new independent claims 41 and 42 emphasize that applicants have invented webs of elastomeric fibers – webs of highly stretchable elastic fibers that are oriented and dimensionally stable. Applicants have advanced the art by the preparation of such products, which are desired products that, insofar as known, have never before been available.

With the allowance of claims 41 and 42 it is understood that the species claims 3-5, 7, and 18 would be reinstated.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested.

Respectfully submitted,

January 11, 2005
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